HEMATITE FUEL FABRICATION FACILITY, RECYCLE RECOVERY BUILDING
(Building No. 240)
3300 State Road P
Festus
Jefferson County
Missouri

HAER MO-113-H
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PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

HISTORIC AMERICAN ENGINEERING RECORD
National Park Service
U.S. Department of the Interior
1849 C Street NW
Washington, DC 20240-0001

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HEMATITE FUEL FABRICATION FACILITY
BUILDING 240
(Recycle Recovery Building)

HAER No. MO-113-H

Location: 3300 State Road P
Festus, Jefferson County, Missouri

Present Owner: Westinghouse Electric Company Limited Liability Corporation (LLC).

Present Use: The only areas currently being used are the Health Physics and Laboratory as a radiological oversight area during the decommissioning process.

Significance: The Hematite Fuel Fabrication Facility, also known as Hematite Former Fuel Cycle Facility and the Westinghouse Electric Company Hematite Facility, was constructed over a period of thirty-one years. The Facility was the first privately owned and operated uranium fuel production plant in the United States. The plant produced nuclear fuel for military as well as peacetime purposes throughout the "Cold War" era.

The Hematite Fuel Fabrication Facility produced high-enriched nuclear fuel for the U.S. Navy nuclear submarine program and other reactor programs during the "Cold War" years of 1956 to 1974. After 1974 the Facility produce only commercial grade low enriched uranium for commercial nuclear power facilities.

PART I. HISTORICAL INFORMATION

A. Physical History

1. **Date of Construction:** 1956

2. **Architect:** The architect for this building is unknown.

3. **Owners, Occupants and Uses:** Owners include: Mallinckrodt Chemical Works, United Nuclear Corporation, Gulf United Nuclear Fuels Corporation, Combustion Engineering Corporation, Asa Brown Boveri, and Westinghouse Electric Company, LLC. Building 240 was dedicated to the chemical conversion of uranium into compounds, solutions, and metals.

4. **Builder-Contractor:** The contractor is unknown.

5. **Original Plans and Construction:** The location of the original is unknown.

6. **Alterations and Additions:** Room 240-4, the "Blue Room," was added in 1958.

A. Historical Context

Building 240 was initially divided into three sections and thus numbered 1,2,3. These rooms were also given a color designation in order to prevent the cross mixing of various enrichments. Building 240 was dedicated to the chemical conversion of uranium into compounds, solutions, and metals. This building was further divided into areas for high-enriched and low-enriched uranium processes.

Room 240-1 historically housed the lunchroom, offices, locker rooms and a laundry facility.

Room 240-2, the "Red Room," contained high-enriched processes. The "Red Room" was specifically used for the reduction of UF6 to Uranium Tetrafluoride, UF4. The conversion of UF4 to uranium metal and powder, high-enriched scrap recovery, and other

chemical conversion processes using high or fully enriched uranium occurred in this room.

Room 240-3, the "Green Room," housed the low-enriched conversion processes and high-enriched scrap processing, the powder operation including ammonium diurinate (ADU), and the oxidation/reduction furnaces. The "Green Room" was equipped to produce over 1000 pounds of product per day.

Room 240-4, the "Blue Room," was added in 1958; it was divided into two equal parts. Historically, one half was used for intermediate-enrichment powder operations, and the other half was a research and development area, referred to as the "Blue Room Laboratory."

PART II. ARCHITECTURAL INFORMATION

A. General Statement

1. **Architectural Character:** Modern industrial

2. **Condition of Fabric:** Fair condition

B. Description of Exterior

1. **Overall dimensions:** This building measures 81'-8" x 212'-2" (the entry changing area measures 27' x 51'-1" and 12' x 39'). Building 240 measures 17,334 total square feet.

2. **Foundation:** Reinforced concrete

3. **Walls:** Concrete block

4. **Structural system, framing:** Steel framing

5. **Porches:** There are no porches.

6. **Chimneys:** There are no chimneys.

7. **Openings:**

   a. **Doorways and Doors:** There is one door facing north for ingress and egress.

   b. **Windows:** There are fifteen one-over-one, double hung, symmetrically spaced windows.

8. **Roof:**

   a. **Shape, covering:** Flat, concrete-on-metal roof.

   b. **Cornice, eaves:** There are no cornices or eaves.

   c. **Dormers, cupolas, towers:** There are no dormers, cupolas or towers.

C. **Description of Interior**

1. **Floor plans:** Building 240 is divided into four main rooms. There are three large rooms and the forth room is divided in half, and there are seven ancillary rooms around the perimeter of the building, all of the rooms are accessed by a hall on the west side of the building. All of the rooms can be accessed from building 253.

2. **Stairways:** There are no stairways.

3. **Flooring:** Concrete slab

4. **Wall and ceiling finish:** The walls are painted concrete block and the ceiling is exposed steel beams under metal sheathing.

5. **Openings:** Building 240 opens into Building 253 on the east. Within Building 240, rooms 240-1, 240-2, 240-3, 240-4 are connected by a hallway located on the west side of the building that runs north and south.

6. **Decorative features:** There are no decorative features.

7. **Hardware:** The existing hardware is modern.

8. **Mechanical equipment:**

   a. **Heating, air conditioning, ventilation:** Modern heating and cooling system.

   b. **Lighting:** Fluorescent

   c. **Plumbing:** Modern plumbing

D. **Site**

1. **General setting and orientation:** Building 240 faces State Road P on the north, Building 235 on the west, and is connected to Building 253 on the east.

2. **Historic landscape design:** Vernacular landscape.

PART III. SOURCES OF INFORMATION

A. **Architectural drawings:** The original plans are currently held by Westinghouse Electric Company Limited Liability Corporation (LLC).

B. **Bibliography:**

Malich, Phillip J. *034-JE-02 Proposed Hematite Former Fuel Processing Facility*. Missouri Department of Natural Resources, State Historic Preservation Office, Jefferson City, Missouri, 2002.

Rode, James A. Deposition. November 13, 2001, in Westinghouse Electric Company LLC v US and etal. Case no.4:2003cv00861. Deposition held at the law offices of Babst and Calland, Pittsburgh, Pennsylvania.

Rode, James A. Deposition. May 9, 2002, in Westinghouse Electric Company LLC v US and etal. Case no.4:2003cv00861. Deposition held at the law offices of Babst and Calland, Pittsburgh, Pennsylvania.

PART IV. PROJECT INFORMATION

This Historic American Engineering Record (HAER) documentation project was undertaken due to the owner's desire to decommission the Facility. The Facility will be disassembled (this is being done for safety purposes and the work is being done in accordance with federal law and regulations regarding hazardous waste clean-up and disposal). In 2003, Westinghouse Electric Company, LLC, hired SCI Engineering, Inc., of St. Charles, Missouri, to complete the HAER documentation of the Hematite Fuel Fabrication Facility. Dr. Steve Dasovich supervised the project and Historian Colleen Small-Vollman authored the HAER documentation report. The report was compiled by Susan Sheppard. Bruce Meyer and Todd Kapler completed the photographic documentation of the Facility, and Asa Westphal completed the floor plan drawings.